

WHAT IS CLAIMED IS:

1. A method for engraving an image on a surface of an article selected from a group consisting of brick, ceramic tile, concrete pavers and natural stone articles, comprising the steps of:

5 providing a laser engraving apparatus comprising a steerable laser beam operable to be substantially continuously moved over a predetermined beam path on said surface to provide an engraved image having a predetermined width;

10 causing said laser beam to be traversed over said surface along a predetermined first beam path; and

repeatedly traversing said laser beam over a path substantially parallel to said first beam path and incrementally spaced therefrom a sufficient number of times
15 to define the engraved image.

2. The method set forth in Claim 1 including the step of:

repeating the step of causing said laser beam to repeatedly traverse over incrementally spaced beam paths to
5 provide a predetermined depth of said graphic image.

3. The method set forth in Claim 1 including the step of:

providing said laser engraving apparatus with a CO₂ laser having a predetermined beam power output.

4. The method set forth in Claim 3 including the step of:

reducing said laser beam to a predetermined beam width for increasing the intensity of said laser beam 5 sufficiently to engrave an image on said article.

5. The method set forth in Claim 1 including the step of:

engraving additional graphic images on said article by causing said laser beam to trace multiple paths 5 over the entirety of each of said additional graphic images seriatim so as to concentrate heat in said article in the vicinity of said additional graphic images, respectively.

6. The method set forth in Claim 1 including the step of:

engraving a graphic image on said article at room temperature and at atmospheric conditions.

7. The method set forth in Claim 1 including the step of:

engraving said image on said article by vitrifying the material composition of said article at said image.

8. The method set forth in Claim 1 including the step of:

reducing the beam width of said laser beam to not less than about .013 inches diameter.

9. The method set forth in Claim 1 including:

providing the intensity of said laser beam on said surface to be about 1.333×10^5 watts/cm².

10. The method set forth in Claim 9 including the step of:

traversing said laser beam over said surface at a rate of about 120 mm/sec to 1000 mm/sec.

11. A method for engraving an image on a surface of an article selected from a group consisting of brick, ceramic tile, concrete pavers and natural stone articles, comprising the steps of:

5 providing a laser engraving apparatus comprising a steerable continuous laser beam operable to be continuously moved over a predetermined beam path on said surface to provide an engraved image having a predetermined width;

causing said laser beam to be traversed over said 10 surface along a predetermined first beam path which includes an outline of a graphic image to be engraved on said article;

repeatedly traversing said laser beam over continuous paths substantially parallel to said first beam 15 path, incrementally spaced therefrom and moving toward a centerline of the width of said image a sufficient number of times to define said image; and

repeating the step of traversing said laser beam to define said image by said repeated traversals to provide 20 a predetermined depth of cut of said graphic image.

12. The method set forth in Claim 11 including the step of:

providing said laser engraving apparatus with a CO₂ laser having a predetermined beam power output.

13. The method set forth in Claim 12 including the step of:

reducing said laser beam to a predetermined beam width for increasing the intensity of said laser beam 5 sufficiently to engrave an image in said article.

14. The method set forth in Claim 11 including the step of:

engraving additional graphic images on said article by causing said laser beam to trace a path over the 5 entirety of each of said additional graphic images seriatim so as to concentrate heat in said article in the vicinity of said additional graphic images, respectively.

15. The method set forth in Claim 11 including:

providing the intensity of said laser beam on said surface to be about 1.333×10^5 watts/cm².

16. A method for engraving a surface of an article selected from a group consisting of brick, ceramic tile, concrete pavers and natural stone articles, comprising the steps of:

5 (a) providing an apparatus comprising a laser generating a steerable laser beam reduced to a predetermined beam width and operable to be continuously moved over a predetermined beam path on said surface to provide a first engraved image having a predetermined width;

10 (b) causing said laser beam to be traversed over said surface along a predetermined first beam path which includes an outline of said first image to be engraved on said article;

15 (c) repeatedly traversing said laser beam over a path substantially parallel to said first beam path, incrementally spaced therefrom and of incrementally reduced path length, a sufficient number of times to define said first image; and

20 (d) repeating steps (b) and (c) to engrave a second image on said article.

17. The method set forth in Claim 16 including the step of:

5 engraving additional graphic images on additional articles by causing said laser beam to trace a path over the entirety of each of said additional graphic images seriatim so as to concentrate heat in said additional articles in the vicinity of said additional graphic images, respectively.

18. The method set forth in Claim 16 including the step of:

 reducing the beam width of said laser beam to not less than about .013 inches diameter.

19. The method set forth in Claim 18 including:
providing the intensity of said laser beam on said
surface to be about 1.333×10^5 watts/cm².

20. The method set forth in Claim 19 including the
step of:

traversing said laser beam over said surface at a
rate of about 120 mm/sec to 1000 mm/sec.

21. A method for engraving a surface of an article
selected from a group consisting of brick, ceramic tile,
concrete pavers and natural stone articles, comprising the
steps of:

5 (a) providing an apparatus comprising a laser
generating a steerable laser beam having a predetermined
beam width and operable to be continuously moved over a
predetermined beam path on said surface to provide a first
engraved image having a predetermined width;

10 (b) causing said laser beam to be traversed over
said surface along a predetermined first beam path which
includes an outline of said first image to be engraved on
said article;

15 (c) repeatedly traversing said laser beam over a
path substantially parallel to said first beam path,
incrementally spaced therefrom and of incrementally reduced
path length, a sufficient number of times to define said
first image;

20 (d) repeating steps (b) and (c) on another
article to provide said image on said another article; and

(e) repeating steps (b) and (c) on the first
mentioned article and then again on said another article to
provide a predetermined depth of cut of images on said
articles, respectively.

22. The method set forth in Claim 21 including the steps of:

engraving additional graphic images on additional articles, respectively, by causing said laser beam to trace 5 a path over the entirety of each of said additional graphic images seriatim so as to concentrate heat in said additional articles in the vicinity of said additional graphic images, respectively.

23. The method set forth in Claim 21 including the step of:

reducing the beam width of said laser beam to not less than about .013 inches diameter.

24. The method set forth in Claim 23 including:

providing the intensity of said laser beam on said surface to be about 1.333×10^5 watts/cm².

25. The method set forth in Claim 24 including the step of:

traversing said laser beam at a rate of about 120 mm/sec to 1000 mm/sec.